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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,895	08/27/2002	David Wolff	DSC-02002	7973
31661	7590	06/01/2004	EXAMINER	
PROTON ENERGY SYSTEM 10 TECHNOLOGY DRIVE WALLINGFORD, CT 06492			NGUYEN, HOANG M	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 06/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/064,895

Applicant(s)

WOLFF ET AL.

Examiner

Hoang M Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Applicant's amendment dated May 11, 2004, has been fully considered.

Applicant has added new limitations to the independent claims defining the storage tank having two location for liquid output and gas output. Accordingly, a new ground of rejection has been made.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 7-10, 11, 16-17, 22, 25, 29, 36, are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4910963 (Vanzo) in view of U.S. 4253428 (Billings et al). Vanzo discloses a gas turbine 13 comprising a tank contains liquid hydrogen (26D, said fluid being vaporized by vaporizer 46 (either the vaporizer 46 or tank 26D can be considered as storage tank as claimed) through line 64 to flow into another storage tank (boiler 30), said stored hydrogen in boiler 30 is then discharged through line 42 to drive a turbine 13 to generate electricity by an electrical generator 34. Vanzo but does not disclose a pressure relief valve, and the concept of having liquid and gas outputs from the storage tank. Billings et al is relied upon to disclose a pressure relief valve 62 being used with hydrogen tank 66, 70, and hydrogen tank having liquid coming out to pump 134, and gas coming out through regulator valve 46, and intake through line 130. It would have been obvious at the time the invention was

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made to a person having ordinary skill in the art to use pressure relief valves in the system of Vanzo, as taught by Billings et al for the purpose of more effectively controlling the pressure of the hydrogen tank, and to provide both liquid and gas outputs from the storage tank for the purpose of achieving a compact structure. Regarding claims 7-9, Vanzo does not disclose the specific flow rate as claimed in claims 7-9. However, it would have been a matter of design choice for a person having ordinary skill in the art to provide different flow rate in the engine of Vanzo for the purpose of achieving appropriate work outputs depending on the flow rates.

Claims 2, 12, 26, 27, are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4910963 (Vanzo) in view of Billings et al and U.S. 5375580 (Stolz et al). Vanzo as modified by Billings et al discloses all the claimed subject matter as set forth above in the rejection of claim 1, but does not disclose an internal combustion engine, and the concept of using waste heat of the engine to drive alternator. STolz et al is relied upon to disclose an internal combustion engine can be used in a system. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use internal combustion engine in the system of Vanzo as taught by STolz et al for the purpose of achieving appropriate power output.

Claims 3, 5-6, 14-15, are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4910963 (Vanzo) in view of Billings et al and U.S. 6543229 (Johansson). Vanzo as modified by Billings et al discloses all the claimed subject matter as set forth above in the rejection of claim 1, but does not disclose a Stirling engine, and the concept of using waste heat of the engine to drive alternator. Johansson is relied upon to disclose a Stirling engine can be used in a system and the concept of using waste heat of the Stirling engine for driving an alternator. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use Stirling engine in the system of Vanzo, and to use the waste heat to drive an alternator as taught by Johansson for the purpose of obtaining more work from the waste heat and because using the Stirling engine is well known and is functionally equivalent with other gas turbine engine.

Claims 18-19, 30-31, 37-38, are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4910963 (Vanzo) in view of U.S. 4253428 (Billings et al) and further in view of U.S. 5375580 (Stolz et al). Vanzo as modified by Billings et al discloses all the claimed subject matter as set forth above in the rejection of claim 16, but does not disclose an internal combustion engine, and the concept of using waste heat of the engine to drive alternator. STolz et al is relied upon to disclose an internal combustion engine can be used in a system. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use internal

combustion engine in the system of Vanzo as taught by STolz et al for the purpose of achieving appropriate power output.

Claims 20-21, 28, , are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4910963 (Vanzo) in view of U.S. 4253428 (Billings et al) and further in view of U.S. 6543229 (Johansson). Vanzo as modified by Billings et al discloses all the claimed subject matter as set forth above in the rejection of claim 16, but does not disclose a Stirling engine, and the concept of using waste heat of the engine to drive alternator. Johansson is relied upon to disclose a STirling engine can be used in a system and the concept of using waste heat of the Stirling engine for driving an alternator. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use Stirling engine in the system of Vanzo, and to use the waste heat to drive an alternator as taught by Johansson for the purpose of obtaining more work from the waste heat and because using the Stirling engine is well known and is functionally equivalent with other gas turbine engine.

Claims 23-24, 32-25, are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4910963 (Vanzo) in view of U.S. 4253428 (Billings et al) and further in view of U.S. 5003772 (Huber). Vanzo as modified by Billings et al discloses all the claimed subject matter as set forth above in the rejection of claim 16, but does not disclose a Stirling engine, and the concept of using a pump for pumping hydrogen. Huber is relied upon to disclose a system for using a pump 20 for pumping hydrogen

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from tank 14 to drive a turbine 24. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use a pump in the system of Vanzo as taught by Huber for the purpose of more effectively moving the fluid out of the tank.

Claim 33 is rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 4910963 (Vanzo) in view of U.S. 4253428 (Billings et al) and Huber, and further in view of U.S. 5375580 (Stolz et al). Vanzo as modified by Billings et al and Huber discloses all the claimed subject matter as set forth above in the rejection of claim 16, but does not disclose an internal combustion engine, and the concept of using waste heat of the engine to drive alternator. STolz et al is relied upon to disclose an internal combustion engine can be used in a system. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use internal combustion engine in the system of Vanzo as taught by STolz et al for the purpose of achieving appropriate power output.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

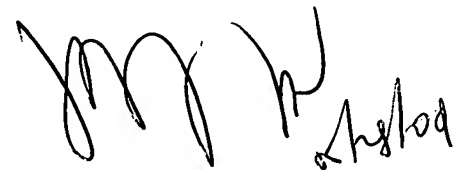
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Examiner Nguyen whose telephone number is (703) 308-3477. The examiner can normally be reached on Monday--Thursday from 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion, can be reached on (703)-308-2623. The fax phone number for the Examiner is (703) 872-9302 for regular communication, and (703) 872-9303 for after final communication.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0861.

A handwritten signature in black ink, appearing to read 'Hoang Nguyen', with a date '5/28/04' written below it.

HOANG NGUYEN
PRIMARY EXAMINER
ART UNIT 3748

Hoang Minh Nguyen
5/28/04